

CLAIMS

1. A filled olefin polymer concentrate comprising:
 - A. about 1.0 to about 40.0 wt% of an oxidized olefin polymer material containing from about 1 to about 200 mmol total peroxide per kilogram of oxidized olefin polymer;
 - B. about 0.5 to about 40.0 of a propylene polymer grafted with a monomeric vinyl acid, ester or anhydride; and
 - C. about 7.0 to about 80.0 wt% of a filler chosen from fiberglass, carbon fibers, graphite fibers, whiskers, metal fibers, aramides, talc, wollastonite, calcium carbonate, mica, glass microspheres, ceramic microspheres, glass wool, rock wool, stainless steel wool, steel wool, gypsum, alumina, alumina-silica, silica, and mixtures thereof;wherein the sum of components A + B + C is equal to 100 wt%.
2. The composition of claim 1 wherein the oxidized olefin polymer material comprises a polymer of propylene, ethylene, butene-1 or mixtures thereof.
3. The composition of claim 2 wherein the oxidized olefin polymer material comprises a polymer of propylene chosen from
 - (A) a homopolymer of propylene having an isotactic index greater than about 80%;
 - (B) a random copolymer of propylene and an olefin chosen from ethylene and C₄-C₁₀ α -olefins, containing about 1 to about 30 wt% of said olefin, and having an isotactic index greater than about 60%;
 - (C) a random terpolymer of propylene and two olefins chosen from ethylene and C₄-C₈ α -olefins, containing about 1 to about 30 wt% of said olefins, and having an isotactic index greater than about 60%;
 - (D) an olefin polymer composition comprising:
 - (i) about 10 parts to about 60 parts by weight of a propylene homopolymer having an isotactic index of at least about 80%, or a crystalline copolymer chosen from (a) propylene and ethylene, (b) propylene, ethylene and a C₄-C₈ α -olefin, and (c) propylene and a C₄-C₈ α -olefin, the copolymer having a propylene content of more than about 85% by weight, and an isotactic index greater than about 60%;

- (ii) about 3 parts to about 25 parts by weight, of a copolymer of ethylene and propylene or a C₄-C₈ α -olefin that is insoluble in xylene at ambient temperature; and
- (iii) about 10 parts to about 85 parts by weight, of an elastomeric copolymer chosen from (a) ethylene and propylene, (b) ethylene, propylene, and a C₄-C₈ α -olefin, and (c) ethylene and a C₄-C₈ α -olefin, the copolymer optionally containing about 0.5% to about 10% by weight of a diene, and containing less than about 70% by weight, of ethylene and being soluble in xylene at ambient temperature and having an intrinsic viscosity of about 1.5 to about 6.0 dl/g;

the total of (ii) and (iii), based on the total olefin polymer composition being from about 50% to about 90%, and the weight ratio of (ii)/(iii) being less than about 0.4; and

(E) mixtures thereof.

4. The composition of claim 3 wherein the oxidized olefin polymer material is a homopolymer of propylene having an isotactic index greater than about 80%.
5. The composition of claim 2 wherein the oxidized olefin polymer material comprises a polymer of ethylene chosen from (A') homopolymers of ethylene, (B') random copolymers of ethylene and an α -olefin selected from C₃-C₁₀ α -olefins having a polymerized α -olefin content of about 1 to about 20% by weight, (C') random terpolymers of ethylene and C₃-C₁₀ α -olefins having a polymerized α -olefin content of 1 to 20% by weight, and (D') mixtures thereof.
6. The composition of claim 2 wherein the oxidized olefin polymer material comprises a polymer of butene-1 chosen from (A'') homopolymers of butene-1, (B'') copolymers or terpolymers of butene-1 with ethylene, propylene or C₅-C₁₀ α -olefin, the comonomer content ranging from about 1% by weight to about 20% by weight, and (C'') mixtures thereof.
7. The composition of claim 1 wherein component B is present in an amount from about 1.0 wt% to about 20.0 wt%.
8. The composition of claim 1 wherein component A is present in an amount from about 5.0 wt% to about 35.0 wt%.

9. The composition of claim 1 wherein component C is present in an amount from about 10.0 wt% to about 75.0 wt%.
10. The composition of claim 1 wherein component C is fiberglass.
11. The composition of claim 1 where component B is a propylene polymer grafted with maleic anhydride.
12. A filled olefin polymer composition comprising:
 - A. about 0.5 wt% to about 30.0 wt% of an oxidized olefin polymer material containing from about 1 to about 200 mmol total peroxide per kilogram of oxidized olefin polymer;
 - B. about 0.2 wt% to about 30.0 wt% of a propylene polymer grafted with a monomeric vinyl acid, ester or anhydride.
 - C. about 5.0 wt% to about 60.0 wt% of a filler chosen from fiberglass, carbon fibers, graphite fibers, metal fibers, whiskers, aramides, talc, wollastonite, calcium carbonate, mica, glass microspheres, ceramic microspheres, glass wool, rock wool, stainless steel wool, steel wool, gypsum, alumina, alumina-silica, silica, and mixtures thereof; and
 - D. about 15.0 to about 90.0 wt% of a non-oxidized olefin polymer material; wherein the sum of components A + B + C + D is equal to 100 wt%.
13. The composition of claim 12 wherein the oxidized olefin polymer material is chosen from:
 - (A) a homopolymer of propylene having an isotactic index greater than about 80%;
 - (B) a random copolymer of propylene and an olefin chosen from ethylene and C₄-C₁₀ α -olefins, containing about 1 to about 30 wt% of said olefin, and having an isotactic index greater than about 60%;
 - (C) a random terpolymer of propylene and two olefins chosen from ethylene and C₄-C₈ α -olefins, containing about 1 to about 30 wt% of said olefins, and having an isotactic index greater than about 60%;
 - (D) an olefin polymer composition comprising:
 - (i) about 10 parts to about 60 parts by weight, of a propylene homopolymer having an isotactic index of at least about 80%, or a crystalline copolymer chosen from (a) propylene and ethylene, (b) propylene, ethylene and a C₄-C₈ α -olefin, and (c) propylene and a C₄-C₈ α -olefin, the copolymer

having a propylene content of more than about 85% by weight, and an isotactic index greater than about 60%;

- (ii) about 3 parts to about 25 parts by weight, of a copolymer of ethylene and propylene or a C₄-C₈ α -olefin that is insoluble in xylene at ambient temperature; and
- (iii) about 10 parts to about 85 parts by weight, of an elastomeric copolymer chosen from (a) ethylene and propylene, (b) ethylene, propylene, and a C₄-C₈ α -olefin, and (c) ethylene and a C₄-C₈ α -olefin, the copolymer optionally containing about 0.5% to about 10% by weight of a diene, and containing less than about 70% by weight, of ethylene and being soluble in xylene at ambient temperature and having an intrinsic viscosity of about 1.5 to about 6.0 dl/g;

the total of (ii) and (iii), based on the total olefin polymer composition being from about 50% to about 90%, and the weight ratio of (ii)/(iii) being less than about 0.4; and

(E) mixtures thereof.

- 14. The composition of claim 13 wherein the oxidized olefin polymer material is a homopolymer of propylene having an isotactic index greater than about 80%.
- 15. The composition of claim 12 wherein the oxidized olefin polymer material is chosen from (A') homopolymers of ethylene, (B') random copolymers of ethylene and an α -olefin selected from C₃-C₁₀ α -olefins having a polymerized α -olefin content of about 1 to about 20% by weight, (C') random terpolymers of ethylene and C₃-C₁₀ α -olefins having a polymerized α -olefin content of 1 to 20% by weight, and (D') mixtures thereof.
- 16. The composition of claim 12 wherein the oxidized olefin polymer material is chosen from (A'') homopolymers of butene-1, (B'') copolymers or terpolymers of butene-1 with ethylene, propylene or C₅-C₁₀ α -olefin, the comonomer content ranging from about 1 mole % to about 15 mole %, and (C'') mixtures thereof.
- 17. The composition of claim 12 wherein component A is present in an amount from about 1.0 to about 25.0 wt%
- 18. The composition of claim 12 wherein component B is present in an amount from about 0.3 to about 10.0 wt%.

19. The composition of claim 12 wherein component C is present in an amount from about 10.0 to about 50.0 wt%.
20. The composition of claim 12 wherein component C is fiberglass
21. The composition of claim 12 wherein component B is a propylene polymer grafted with maleic anhydride.